The opinion in support of the decision being entered today was *not* written for publication and is *not binding precedent* of the Board.
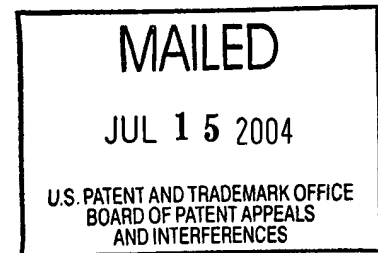
Paper No. 20

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte HOCK CHYE GAN, DAVID E. JONES, STEPHEN BIRD, ROBERT LUCAS, JASWANT VIRDEE, and RICKY KAURA

Appeal No. 2003-1602
Application No. 09/286,087

ON BRIEF

MAILED

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U.S. PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS
AND INTERFERENCES

Before HAIRSTON, RUGGIERO, and BARRY, *Administrative Patent Judges.*

BARRY, *Administrative Patent Judge.*

DECISION ON APPEAL

A patent examiner rejected claims 1-5 and 7-16. The appellants appeal therefrom under 35 U.S.C. § 134(a). We reverse.

BACKGROUND

The invention at issue on appeal migrates data in a cellular communications system. (Appeal Br. at 2.) A cellular communications system provides communications to mobile terminals, which are served by base stations. A centralized database contains data used to identify terminals as authorized subscribers and to locate these subscribers. (Spec. at 1.)

In the standardized, "European GSM system," explain the appellants, the

centralized database is called a Home Location Register ("HLR"). (Spec., Prior Art.[1])

The HLR stores subscriber data and system data. When a subscriber moves into a

local area, the area's Mobile Switching Center ("MSC") downloads the subscriber's data

from the HLR into a local visitors location register ("VLR"). The MSC uses these data to

identify features of the subscriber. (*Id.*)

As the number of subscribers increases, a single HLR often cannot maintain

subscriber data alone, thereby necessitating the balancing of data between plural

HLRs. Furthermore, backup HLRs are required to restore and maintain continuity of

service when an HLR fails. When active subscriber data are to be transferred from one

HLR to another, either for load balancing or for backup, assert the appellants, normal

subscriber services are suspended. The subscriber data stored in the first HLR are

copied onto a storage medium such as a tape; the medium is manually transported to

the other HLR; the subscriber data are installed onto the other HLR; and normal service

is restored using the other HLR. According to the appellants, such a process can take

several hours and "represents a significant disruption of normal service to subscribers."

(*Id.*)

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[1]The appellants should number the pages of their specifications to facilitate
citation thereto.

In contrast, the appellants' invention comprises three methods of migrating data. The first method migrates subscriber data between a pair of load-balanced HLRs. Both HLRs store data relating to all subscribers supported by the pair. Each HLR supports approximately half the subscriber data; the data stored for these subscribers are in an "active" sate. The data stored for the remaining subscribers are in a "standby" state. (Appeal Br. at 3.)

When the load shared by the HLRs is to be balanced, i.e., when some subscriber data are to be migrated from one HLR to the other HLR, a copy of the subscriber data need not be transferred therebetween. Instead, the state of the subscriber data at one HLR is changed from active to standby, and the state of the same subscriber data at the other HLR is changed from standby to active. During migration, only the subscriber data being migrated are unavailable for subscriber services. The rest of the subscriber data is still available during migration. (*Id.* at 4.)

The second and third inventive methods migrate subscriber data from one HLR to a repaired HLR. In such a situation, the first HLR is supporting all subscribers; all subscriber data therein are active. The repaired HLR no longer has current subscriber data.

The second method copies data for all the subscribers from the first HLR to the repaired HLR. The subscriber data are copied in the standby state. The load is then balanced between the HLRs as in the first method. (*Id.* at 5.)

Rather than initially copying all subscriber data from the first node to the repaired node, the third method of the invention changes the state of a subscriber's data from active to standby, and then copies the data from the first node to the repaired node. The subscriber's data are copied in the standby state. Once copied, the state of the subscriber's data in the repaired node is changed to active. The process is repeated for each subscriber or each small group of subscribers to be supported by the repaired node. (*Id.* at 6.)

A further understanding of the invention can be achieved by reading the following claim.

14. A method of migrating subscriber data associated with a plurality of subscriber identities from a first Home Location Register (HLR) node to a second HLR node, said HLR nodes being connected by a fixed network, for each subscriber data associated with a subscriber identity or a small group of subscriber identities to be migrated from said first HLR node to said second HLR node, the method comprises the steps of:

A. at said first HLR node, changing a state of said subscriber data from active to standby;

B. copying from said first HLR node said subscriber data associated with said subscriber identity or said small group of subscriber identities to said second HLR node; and

C. at said second HLR node, changing the state of said subscriber data from standby to active,

wherein active data of the first HLR node which is not to be migrated or is to be migrated but has not yet been migrated is maintained as active while said subscriber data currently being migrated is processed according to steps A to C.

Claims 1-3, 5, 7-10, 13, and 14 stand rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 5,956,637 ("Ericsson"). Claim 4 stands rejected under 35 U.S.C. § 103(a) as obvious over Ericsson and U.S. Patent No. 6,021,327 ("Nguyen"). Claims 11, 12, 15, and 16 stand rejected under § 103(a) as obvious over Ericsson.

OPINION

Rather than reiterate the positions of the examiner or the appellants *in toto*, we focus on the dispositive point of contention therebetween. Noting that "subscriber data is stored in a database node referred to in the art as an HLR or home location register," (Examiner's Answer at 4), the examiner asserts, "[w]hen the subscriber roams to, or 'visits', an area served by another HLR node, the subscriber data is transferred to the other HLR into a database referred to as a VLR or visitor location register." (*Id.* at 4-5.) The appellants argue, "there is an actual transfer of data in the case of Ericsson et al, whereas in the present invention the so-called 'transfer of data' is achieved by

coordinating the change of status of a subscriber's data from active to standby in, for

example, a first HLR and from standby to active in a second HLR." (Reply Br. at 5.)

In addressing the point of contention, the Board conducts a two-step analysis.

First, we construe the independent claims at issue to determine their scope. Second,

we determine whether the construed claims are anticipated or would have been

obvious.

1. CLAIM CONSTRUCTION

"Analysis begins with a key legal question -- *what* is the invention *claimed*?"

Panduit Corp. v. Dennison Mfg. Co., 810 F.2d 1561, 1567, 1 USPQ2d 1593, 1597 (Fed.

Cir. 1987). Here, claims 1, 11, 13, and 15 recite in pertinent part the following

limitations: "for each subscriber data associated with a subscriber identity or a small

group of subscriber identities to be migrated from said first HLR node to said second

HLR node, . . . transferring said subscriber data from said first HLR node to said second

HLR node by way of changing at said second HLR node the state of the subscriber

data from standby to active. . . ." Similarly, claims 14 and 16 recite in pertinent part the

following limitations: "for each subscriber data associated with a subscriber identity or a

small group of subscriber identities to be migrated from said first HLR node to said

second HLR node . . . at said second HLR node, changing the state of said subscriber

data from standby to active." In summary, the independent claims require transferring

subscriber data from a first HLR node to a second HLR node by **changing the state of**

the subscriber data from standby to active at the second HLR node.

2. ANTICIPATION AND OBVIOUSNESS DETERMINATIONS

"Having construed the claim limitations at issue, we now compare the claims to

the prior art to determine if the prior art anticipates those claims." *In re Cruciferous*

Sprout Litig., 301 F.3d 1343, 1349, 64 USPQ2d 1202, 1206 (Fed. Cir. 2002). "A claim

is anticipated only if each and every element as set forth in the claim is found, either

expressly or inherently described, in a single prior art reference." *Verdegaal Bros., Inc.*

v. Union Oil Co., 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) (citing

Structural Rubber Prods. Co. v. Park Rubber Co., 749 F.2d 707, 715, 223 USPQ 1264,

1270 (Fed. Cir. 1984); *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 1548, 220

USPQ 193, 198 (Fed. Cir. 1983); *Kalman v. Kimberly-Clark Corp.*, 713 F.2d760, 771,

218 USPQ 781, 789 (Fed. Cir. 1983)). "[A]bsence from the reference of any claimed

element negates anticipation." *Kloster Speedsteel AB v. Crucible, Inc.*, 793 F.2d 1565,

1571, 230 USPQ 81, 84 (Fed. Cir. 1986).

Here, Ericsson discloses "a universal mobile telephone system (UMTS) 100. . . ."

Col. 5, ll. 39-40. The "UMTS 100 comprises a plurality of directory nodes 1-15 and a

plurality of data nodes 16-47." *Id.* at ll. 41-42. "Data nodes 16-47 are e.g. MSCs and

may together include a home location register (HLR) and visitor location register (VLR)

for each mobile subscriber of the system." Col. 6, ll. 29-31. Because the reference's

data nodes include an HLR, the data nodes can be considered "HLR node[s]" as

claimed.

In Erricson's HLR nodes, "[t]he HLR comprises a permanent database containing

data associated with a mobile subscriber and is preferably included within an MSC of

the subscriber's home system. The data stored in the HLR is permanent data that is

independent of the customer's present location, plus temporary data such as addresses

of service centers which have stored short messages for a mobile station." *Id.* at ll. 31-

38.

Also in each of the reference's HLR nodes, "[t]he VLR contains current data for

each mobile subscriber visiting within the data node, including that subscriber's

mobile station's present or most recently known location within the area of the

system covered by the VLR and the mobile station's on/off status. As a

subscriber moves from system to system, the VLR data will be transferred to the

new VLR so that the VLR data [are] contained in a VLR of the system in which the

subscriber is located." *Id.* at ll. 41-47. For example, "FIG. 10B illustrates the data

record contained in HLRA and the VLR of a visited node (VLRA) in which subscriber A

is roaming. In FIG. 10B, only data records DR_2, DR_3 and DR_{N-1} have been transferred

to VLRA." Col. 15, ll. 52-55.

Although Erricson's UMTS transfers subscriber data from the HLRA to the VLRA,

the examiner does not allege, let alone show, that the reference changes the state of

the subscriber data in the VLRA from standby to active. To the contrary, the examiner

admits that "the system treats the VLR data as active. . . ." (Examiner's Answer at 5.)

We are unpersuaded that the subscriber data transferred to the VLRA are transferred in

a standby state, which would require a later change to an active state. The absence of

changing the state of transferred subscriber data from standby to active at a second

HLR node negates anticipation. Therefore, we reverse the anticipation rejection of

claim 1; of claims 2, 3, 5, and 7-10, which depend therefrom; and of claims 13 and 14.

"In rejecting claims under 35 U.S.C. Section 103, the examiner bears the initial

burden of presenting a *prima facie* case of obviousness." *In re Rijckaert*, 9 F.3d 1531,

1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993) (citing *In re Oetiker*, 977 F.2d 1443,

1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992)). "'A *prima facie* case of obviousness is

established when the teachings from the prior art itself would . . . have suggested the

claimed subject matter to a person of ordinary skill in the art.'" *In re Bell*, 991 F.2d 781,

783, 26 USPQ2d 1529, 1531 (Fed. Cir. 1993) (quoting *In re Rinehart*, 531 F.2d 1048,

1051, 189 USPQ 143, 147 (CCPA 1976)).

Here, the examiner does not allege, let alone show, that the addition of Nguyen

or the taking of Official notice "that it is notoriously well known in the art to store

methods as programs on a computer readable medium," (Examiner's Answer at 3),

cures the aforementioned deficiency of Ericsson. Absent a teaching or suggestion of

transferring subscriber data from a first HLR node to a second HLR node by changing

the state of the subscriber data from standby to active at the second HLR node, we are

unpersuaded of a *prima facie* case of obviousness. Therefore, we reverse the

obviousness rejections of claims 4, 11, 12, 15, and 16.

CONCLUSION

In summary, the rejection of claims 1-3, 5, 7-10, 13, and 14 under § 102(e) is

reversed. The rejections of claims 4, 11, 12, 15, and 16 under § 103(a) are also

reversed.

REVERSED

KENNETH W. HAIRSTON
Administrative Patent Judge

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JOSEPH F. RUGGIERO   ) BOARD OF PATENT
Administrative Patent Judge   )   APPEALS
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